

SEP 9 1922

THE RHODE ISLAND MEDICAL JOURNAL



Owned and Published by the Rhode Island Medical Society. Issued Monthly

VOLUME V } Whole No. 156 PROVIDENCE, R. I., SEPTEMBER, 1922 PER YEAR \$2.00
NO. 9 } SINGLE COPY 25 CENTS

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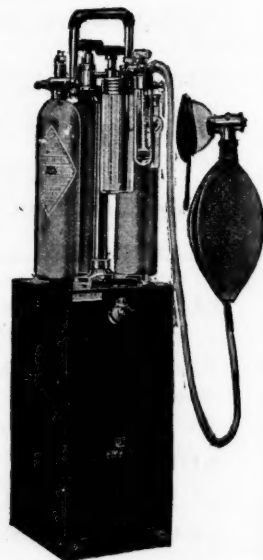
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The Official Organ of the Rhode Island Medical Society
Issued Monthly under the direction of the Publication Committee

VOLUME V {
NUMBER 9 {

Whole No. 156

PROVIDENCE, R. I., SEPTEMBER, 1922

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SINGLE COPY 25 CENTS

ORIGINAL ARTICLES

GLAUCOMA, ITS ETIOLOGY AND TREATMENT.*

FRANK J. McCABE, M.D.
PROVIDENCE, R. I.

The word glaucoma is derived from the Greek, *glaukos*—which means sea-green, and was applied by Hippocrates to all opacities, situated behind the pupil. After a while it was confined to those which presented a green appearance.

By some, the seat of the affection was thought to be in the vitreous humor, by others, in the retina and optic nerve. At a later period, it was thought that glaucoma was due to a peculiar inflammation of the choroid, which occurred most frequently in gouty persons, hence it was termed *arthritic ophthalmia*.

Weller gave a most excellent description of the symptoms of glaucoma, including in it many of the principal and most important points, i. e., the intermittent course of the disease, the sluggishness and dilatation of the pupil, the circumorbital pain, the halo about the candle light, etc. He also made mention of the increased tension of the eye-ball, but it was Mackenzie, in 1830, who first pointed out the importance of this latter sign.

In 1851, Helmholtz invented the ophthalmoscope, which has proved of such incalculable value in diagnosing intra-ocular disease. The first results of ophthalmoscopic examination in cases of glaucoma were negative. It was not long, however, before it was ascertained that there always exists a peculiar change in the optic disc in cases of well marked glaucoma.

In 1854, Jager gave an excellent illustration of the ophthalmoscopic appearances of the optic nerve, in cases of glaucoma, showing the peculiar displacement of the vessels at the edge of the disc. It was, however, reserved for the great genius of Von Graefe to unite these various and disjointed links of the chain of signs and symptoms presented by glaucoma, and, to weld them into one connected whole. It was he who first observed arte-

rial pulsations at the nerve head, and also the excavation or cupping and recognized their relation to increased tension.

Different types or stages of the disease were recognized in the early days, and referred to as acute, subacute and chronic inflammatory glaucoma. When the disease had run its course, and all, even quantitative perception of light was lost, Von Graefe called it "*glaucoma consummatum* or *absolutum*."

Glaucoma simplex was for a long time considered as distinct from glaucoma, with which it was supposed to have nothing in common; except the excavation of the optic nerve, and was originally described by Von Graefe under the title of "*Amaurosis with excavation of the optic nerve*." Donders first described and used the term, *glaucoma simplex*. *Buphthalmas* or *hydrophthalmus* was also called *kerato-globus* and *hydrops* of the anterior chamber. One of the first and most important descriptions of this disease was given in 1869 by Muralt of Zurich under the title of "*Hydrophthalmus congenitus*."

The theories advanced for the cause of the glaucomatous process have been many and varied. While the authorities are agreed that increased intra-ocular tension is the immediate cause, the etiology of the change in tension has occupied the attention and serious study of many master minds, and it is still the great enigma of ophthalmology.

The older theories of glaucoma tried to explain the elevation of tension by attributing it to an increase in the volume of the eyeball due to an increase of the inflow. Von Graefe assumed the existence of an increased excretion of fluid by the vessels of the choroid as a result of inflammation. Donders ascribed the increased secretion on the part of the choroid to the influence of the ciliary nerves, or as a sort of neurosis of secretion.

Stellwag thought that the increase of tension was not due to increased excretion of fluid, but directly to the increase of blood pressure in the vessels of the interior of the eye. Against these theories the objection must be raised primarily that an increase in the inflow or an over-distention of the vessels cannot by themselves account

*Read before the R. I. Ophthalmological and Otological Society at its February meeting, 1922.

for the elevation in tension, since if otherwise normal, an increase in the contents of the eyeball is immediately compensated for by an increased out-flow.

Knies was the first to show that the peripheral adhesions of the iris, which already had been known to exist, occurred regularly in glaucomatous eyes and he brought it into causal relation to glaucoma. He explained the adhesion itself as being due to an adhesive inflammation in the vicinity of the sinus of the chamber. But almost simultaneously, Weber, having examined a recent case of glaucoma, proved that the cause of the obliteration of the sinus was not inflammation but the pushing forward of the iris by the swollen ciliary processes.

Priestly Smith then demonstrated that glaucomatous eyes are, on the average, smaller than normal eyes and have comparatively large lenses. Czernak it was who showed how the thickening of the iris acts simultaneously with dilatation of the pupil. He explained that it is not the coat of the iris that is pushed against the cornea, because the coat of the iris is very thin. But directly, to the inner side, the iris attains its full thickness, so that here its anterior surface turns up and passes abruptly forward; and it is this point which first comes in contact with the posterior surface of the cornea, when the iris is thickened. In this way, the sinus is closed off, so as to form a ring shaped space which no longer communicates with the anterior chamber. Then, in both the anterior and posterior chambers, the pressure rises and forces the most peripheral or root-portion of the iris against the sclera.

The return to normal conditions, such as occurs in the case of the prodromal attacks, Czernak accounts for upon the supposition that owing to the increase of tension, a state of irritation develops which by reflex action causes contraction of the pupil, so that the iris is again drawn away from the cornea. But, in order for this to take place, it is necessary that the sphincter pupillae should be strong enough and, moreover, no adhesion must have formed between the iris and the cornea.

Animal experiments have proved the importance of the occlusion of the sinus of the anterior chamber in the productions of an increase of the intraocular tension. Furthermore, Leber and Bentzen investigated the filtration capacity of

enucleated glaucomatous eyes and found that this capacity was greatly reduced, showing that the occlusion of Fontana's space may cause increase of tension.

Still other ways of occluding the outlet have been thought of. Some ophthalmologists believe that obstruction to the outflow from the vitreous along the central vessels of the optic nerve may cause an engorgement of the intraocular fluid. Laquer thinks that such an obstruction would be harmless, as long as the anterior filtration space was open. Others have agreed with Schwalbe that the space between the choroid and the sclera is a lymph sac, the distention of which may explain the symptoms of glaucoma.

The prevalent view today, following Leber's teaching, is to consider the canal as a closed venous sinus similar in nature to the sinuses of the dura mater, but in 1909 Dr. Uribe Troncoso claimed, as a result of experiments on the filtration of fluids out of the eyes, that the Schlemm canal was a lymphatic vessel. In a second paper in 1914, this view was supported by new physiological researches. The anatomy of the angle and especially its vascular supply and the connections of Schlemm's canal with the venous plexus were reported in an important monograph by L. Maggiore of Rome in 1917. He described a new intrascleral venous plexus near the edge of the cornea and settled the question of the shape and calibre of the small tubes connecting the canal with the venous branches. These he called "collectors" and considered them as mere fissures between the scleral fibres, formed only by an endothelial lining and with virtual lumen. Being inserted obliquely to the canal, they really act as valves, preventing the blood from the venous plexus entering the canal when the general blood pressure is normal. When this is increased, the blood corpuscles can force the barrier made by the "collectors" and fill the canal. He stated that Schlemm's canal has not the structure of a vein, for there is no question of a proper wall, being only a closed plexus formed into spaces excavated in the sclera, lined by endothelium.

In 1907, Trautau undertook the ophthalmoscopic examination of the irido-corneal angle, but to Saltzmann belongs the credit for having perfected this method by the use of a contact glass placed on the cornea, making the accurate observation of normal eyes easy. After numerous examinations, he

declared the canal to be filled with a clear fluid and not with blood, as Leber had asserted. It was only in marked hyperemia of the anterior segment or in pathological conditions that Saltzmann was able to see a reddish ring around the sclera; even then, the color was not indicative of pure blood, but only of a diluted liquid.

Koeppé, using the Nernst-Gullstrand slit lamp and a new Zeiss stereoscopic instrument, for direct examination, was able to see the angle with high magnifications in normal and pathological eyes. He also found Schlemm's canal to contain a clear liquid.

According to some authorities, these demonstrations settle the physiological problems, and they assert that, henceforth, Schlemm's canal must be considered as a lymphatic plexus containing almost pure aqueous humor.

Some hold that the retention is due to the chemical alteration of the intraocular fluid, which causes an irritation of the endothelium lining the outlet passages, which proliferate and cause occlusion.

Another theory is one in which the elasticity of the capsule of the eyeball is considered the primary cause of glaucoma. It has been proven that the normal eye can accommodate itself to an increase in the volume of its contents, and that the capsule of the eye stretches considerably without any increase of tension, therefore, it is obvious that the sclera has lost its elasticity in a senile eye that has been attacked by glaucoma.

Many investigators, like Straub, Nicolai and Vennemann, believe that it is not the loss of elasticity of the sclera, but of the choroid that is accountable for the rise of the intraocular tension. They state that it is not the sclera, but the choroid, that has to bear the pressure of the vitreous and to disburden the venal vorticosae; if the choroid loses its elasticity, the pressure acts upon the veins and produces an engorgement in them.

The above is a partial list of the theories put forth by the greatest minds known to ophthalmology, and after exhaustive research.

You will all agree with me, I am sure, that all of them cannot be correct. It is a fact that no one of them has been accepted as a satisfactory explanation of all the different phases found in the glaucomatous eye.

Roemer, when asked his view of the etiology of glaucoma, said that in his opinion, a universal ex-

planation of the varying pictures of glaucoma is not possible. In general, he said, "I think that the change in the capsule of the globe, which has hitherto been held in much too slight estimation, is the primary cause and furnishes the predisposition to glaucoma. The change in the sclera has been so little appreciated only because it is so slightly prominent clinically and anatomically, yet changes, such as the loss of elasticity, have gradually taken place in the course of life, which predispose to the clinically recognizable outbreak of glaucoma. Prolonged increased tension can cause mechanically, excavation and injury of the optic nerve. Therefore, without underestimating the importance played by the occlusion of the sinus of the anterior chamber, and the increase of the intraocular excretion of fluid, I believe that in primary glaucoma the increase of the intraocular fluid, the occlusion of the sinus of the anterior chamber and the rise of the intraocular tension, are secondary symptoms. The primary change in glaucoma and the predisposing conditions for its clinical symptoms are to be sought, I think, in the capsule of the eyeball. If changes have taken place in the sclera, near the sinus of the anterior chamber, a condition is produced which paves the way for an occlusion, in case of an increase of the intraocular fluid. If the change in the sclera extends to loss of elasticity of the lamina cribosa, it is evident that the disease of the optic nerve must be considered an integral part of the disease glaucoma. If the loss of elasticity of the lamina cribosa is especially marked, it can be understood how the excavation can be caused by the increased tension.

Only when we consider glaucoma to be a disease, per se, which is perhaps caused by a degeneration of the capsule of the eyeball, and consider the intraocular tension, the increased secretion of fluid and the occlusion of the sinus of the anterior chamber to be only secondary symptoms can it be understood how we can influence somewhat the mechanical factors of the change of fluid by our therapeutic measures, but not often to be able to cure the disease as such."

At first the treatment for glaucoma was mercurials, antiphlogistics, diuretics, diaphoretics and mydriatics. Von Graefe was the first to tap the anterior chamber, which gave only temporary relief. He next tried iridectomy for glaucoma in 1856, having found that it had proved of benefit in

ulcerations and infiltration of the cornea, by diminishing the tension. Soon he found that this procedure not only caused a permanent decrease in tension but that it might be regarded as a true curative agent in the treatment of the glaucomatous process in a large percentage of cases. Since that time, iridectomy has been recognized by most of the eminent oculists of Europe, as the most reliable therapeutic agent in the relief of this dreadful disease.

In 1872, De Wecker introduced his trephine, for use, as he said, in cases of absolute glaucoma in which a satisfactory iridectomy cannot be made on account of marked atrophy of the iris and a sclerotomy would not suffice. This procedure has been perfected in the present Elliott trephine operation.

A number of other operative procedures have been recommended, such as cyclodialysis, sclerotomy, peripheral iridotomy, iridotaxis, etc., all having for their object the restoration of drainage of anterior and posterior chambers by the formation of a filtering scar.

The so-called conservative treatment of glaucoma is by use of meiotics, eserine and pilocarpine. The value of meiotics was pointed out by Lazner and Weber in 1876.

The important question, then, is "How shall we treat our glaucoma patients?" or to operate or not to operate,—that is the question.

Some authorities maintain that not only do meiotics arrest the glaucoma and act as adjuvants to the operative treatment, but they as such should supplant operative measures because they are actual remedies for the disease. This view, held by Pflueger, Cohn, Schleich, Koenigshoefer and Bjerram, has led many ophthalmologists to regard operation as a last resort.

Others hold a diametrically opposite view—that valuable time is wasted with meiotics and that vain hopes of a cure without operation are held out to patients.

It is fair to state that neither the operative nor the conservative treatment can cure glaucoma, in the true sense of the word. The problem of its cure is by no means solved. In our effort to combat the disease we must use both methods. The conditions, as presented, impose upon us the se-

rious duty of considering well whether or not we can best serve the patient's interests by the conservative or operative method.

Schleich noted in his cases of glaucoma simplex an advance in 61% and an arrest of the condition in 39%, following operative treatment. Fuchs states that in both glaucoma simplex and inflammatory glaucoma the earlier the operative interference, the better the results in glaucoma simplex. After periods ranging between five and ten years, under observation after operation, he thinks about half his cases remained as before operation. In general, he advises early operation. He states that the success of an operation, as regards vision, can be estimated approximately beforehand, if account is taken of what morbid changes can and what cannot be removed by the operation. Iridectomy reduces the intraocular tension. By it, the glaucomatous cloudiness of the cornea and the disturbance of vision produced by it, as well as the disturbance of vision caused by the compression of the retinal vessels, are removed. But the excavation and the atrophy of the optic nerve fibres associated with it, either do not abate at all, or do so in but very slight degree, so that the disturbance of sight, as far as it is dependent upon them, persists.

Favorable as is the result of operative treatment in many cases, the fact must not be concealed that too often the process is not arrested, in fact, sometimes after an apparently successful operation, the vision rapidly grows worse and blindness supervenes at a rapid rate.

In conclusion, I would say that no satisfying explanation has appeared for the etiology of glaucoma.

We should consider each glaucomatous patient as an individual, study his condition carefully, regulate his living from hygienic standpoint. His vision, tension, visual fields, blind spot and appearance of the nerve head should be carefully noted.

In glaucoma simplex, with little or no increased tension and fields and vision changing but slowly, I feel that conservative treatment would be the choice.

In the inflammatory type, the sooner the operation the better, in my opinion.

THE TREATMENT OF CHRONIC RHEUMATISM WITH ESPECIAL REFERENCE TO RADIUM.

By L. L. ALBERT, M.D.

CENTRAL FALLS, R. I.

The treatment of chronic arthritis has long been the subject of investigation and study by our profession, but until recently the results of these pursuits have not been such as to give any definite method of treatment with assurance of positive relief. Chronic arthritis develops not only because of long continued bacterial infections but also from metabolic disturbances, gastro-intestinal derangements, exposure, diseased teeth, tonsils and many other causes too numerous to mention.

From my observation in the treatment of a great number of cases, I must coincide with those who aver that it is more common in the laboring class, who are exposed to the elements, than to those who lead a sedentary life.

But rheumatism, however, makes no distinction between classes. In most cases the development of the disease is gradual, either by acute exacerbations or gradual progression. The blood stream carries to the joints chemical products of bacterial growth, products that have sprung into being from bacterial action in the intestinal tract, tonsils, teeth, tubes, gall-bladder, and other parts of the human structure.

In the treatment of the disease the main problem is to find a means for the system to eliminate the systemic infection. The etiological factor must be sought and removed, if possible. Occasionally our attention is called to remarkable cures effected by enucleation of the tonsils or removal of abscessed teeth or drainage of the gall-bladder, but comparatively speaking, these cases are rare.

The usual case is one where the patient suffers for years and attempts to effect a cure by shifting from one physician to another, oftentimes resorting to patent or proprietary remedies, by having recourse to electrical treatment or massage, and even to the chiropractor and osteopath, in the hope of being able to throw off this painful ailment. Palliatives affording him temporary relief arouse in the patient hope that he is free from his affliction, only to find in a short while that his system is racked more painfully than before.

Since 1913, serums, sensitized bacteriums and vaccines, both autogenous and stock, have won great favor in the profession. As a result of these

serums and vaccines, in many cases, permanent cures have been effected in some instances, and in practically every case marked relief has been felt by the patient. More recently, injections of sterile milk, non-specific proteins, peptone solutions, typhoid bacilli, or any high protein solution have been used with varying success.

The old method of treatment by restriction of food through diet, in cases of chronic rheumatism especially, and limitation in the use of red meats is being gradually superseded by permission to the patient to enjoy a liberal diet.

As a result of my experience in the treatment of these cases, I wish to call especial attention to the newer, and in my opinion, more reliable treatment than any heretofore used—and that is, injections of radium in solutions in different strengths. After using different concentrations in different patients, and even in the same patient, my experience has been that .25 milligrams of radium dissolved in two cubic centimeters of sterile salt solution gives the best result. The injection is given intravenously in the same manner as any drug is injected into the vein. Of course, cleanliness, care and slowness are essential. If a vein cannot be located, the results in injecting deeply into the muscle apparently are the same, but the reaction is not so prompt nor so severe as in the case of an intravenous injection. After the injection, usually within six to ten hours, the patient feels a general malaise with a marked increase of pain in the affected joints for a varying number of days, from two to ten usually. As soon as the reaction subsides, a general improvement is noted in all the joints. There is less pain, greater motion and a freer usage of the affected joints. My experience has taught me that the greater the reaction, the better is the result. The dosage of radium should be given large enough to cause a reaction lasting about eight days, and should be repeated about every two weeks.

I have been using vaccines and proteins for almost ten years, but the results that I have obtained in very obstinate cases with radium have been far more marked and more successful than any cases I have treated with vaccines and proteins. So pronounced have been the results obtained from the use of radium in the therapy of chronic articular rheumatism that I feel certain that a new and wide field of research has been opened to our profession in the use of this substance, and what the future will show as a result of experimentation with radium is indeed beyond our conception.

THE RHODE ISLAND MEDICAL JOURNAL

Owned and Published by the Rhode Island Medical Society
Issued Monthly under the direction of the Publication Committee

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EDITORIALS

AS TO ADVERTISEMENTS.

We have before announced and we again reiterate that every effort is made by our advertising management to know that our advertisements are of ethical character and represent the best in their especial line of merchandise; for obvious reasons we must decline, however, to entertain any suggestion of editorial comment or praise of various commodities that are advertised in our pages, however worthy they may be of commendation.

We are well aware that these materials ap-

pearing in our columns are of first quality, otherwise we could not seek or accept these advertising contracts, but to treat one or a few editorially, and neglect or ignore others, appeals to us as being neither just nor proper. The other alternative would cause such elongated editorial eulogies that no space would be available for other literary effort, and notwithstanding the somewhat persistent attitude of some of our prospective advertisers, may we be permitted to say that the fixed policy of this JOURNAL, both in regard to reading matter furnished and editorial attention, may not be disturbed?

POLIOMYELITIS.

The lack of definite information as to the mode of transmission of poliomyelitis and the alarming increase in the incidence of the disease that has taken place in the past thirty-five years are matters of great importance to the general practitioner of medicine. Studies as to the etiological factor, methods of attempting its cultivation and the like, must fall to the lot of laboratory investigators, but the field work, the identification of cases and to some extent the collection of data bearing on the origin of these cases must be done by the man in active practice. At a time like the present, when the disease is necessarily in the minds of all the medical men of Rhode Island, mild and non-paralyzed cases are much less likely to be missed than at times when the disease is less prevalent. Nevertheless, even now, instances are occurring in which mild or moderately mild febrile attacks of an indefinite nature are allowed to escape suspicion and later on are proved to have been poliomyelitis by the discovery of a slight but definite muscular paralysis. Such cases must be dangerous to the community.

The doctors of the State can be of the greatest service to the health authorities by endeavoring to identify or bring under suspicion all mild and early cases, by insisting upon careful, complete examination, with lumbar puncture and examination of the spinal fluid where the symptoms render a diagnosis of poliomyelitis at all probable; and, furthermore, by obtaining all the information possible relating to illness among playmates, journeys to other communities and the like—in fact, any information that may be of value to the health authorities in their epidemiological studies of this disease.

THE VOLSTEAD ACT IN RELATION TO PHYSICIANS.

For sometime it has been apparent that the Volstead Act was working a hardship upon the conscientious physician and his patients. In many instances it has been impossible legally to prescribe sufficient liquor for internal medication or grain alcohol for use on certain sensitive skins, and this has been a serious drawback in the Act. While there are various opinions as to the wisdom of a prohibition law, there can be but one opinion regarding the right of physicians to prescribe alcohol when in their opinion it is necessary. The present

feeling toward the prohibition law is in no way helped by the regulations of the Treasury Department concerning the working of this act as it applies to physicians, and we are gratified that the House of Delegates of the American Medical Society has unanimously voted to request the Treasury Department to relax restrictions on prescribing by physicians. There is no reasonable doubt that a physician is the individual who is qualified to pass upon the needs of a patient for alcohol and we believe that no one is wise enough to say that alcohol is not needed by some persons at certain critical times in their lives. In our experience it has been impossible legally to obtain sufficient grain alcohol for use in certain old people confined to bed whose skins were irritated by medicated alcohol. We believe that the time has come when the medical profession should rise up and demand its rights in this very important matter.

VALUE OF PREVENTIVE MEDICINE.

In a recent number of the Weekly Bulletin of the Department of Health of New York City, is a brief review of the accomplishments of the Department during the fifty-four years of its existence. During this period the death rate has dropped from 28 to 11 per 1,000, which means that 100,000 lives were saved last year and 1,000,000 cases of illness prevented if the death rate existing at the time of the foundation of the Department had persisted. In thirty years the death rate of children under five years of age has fallen from 97 to 24 per 1,000, and of infants under one year from 241 to 71 per 1,000. Whereas in 1870 the death rate from malaria was 27 per 1,000, fatal cases of malaria now rarely occur and are usually imported. The city formerly was visited by epidemics of smallpox and in 1872 119 per 100,000 died of this disease. Yet in 1921 there were only 29 cases in the city and no death has occurred in nine years. In 1870, 40 persons of each 100,000 died of typhoid fever, while in 1921 only two died. In 1871, the death rate from tuberculosis, which was 406 per 100,000, has been reduced to 89, a saving of 18,207 lives had the former rate prevailed. Many other diseases have also shown marked decrease. Scarlet fever, from 100 to 5 per 100,000; measles, 62 to 3; whooping cough from 47 to 7; diphtheria from 295 per 100,000 in 1875 to 18 per 100,000 in 1921.

These statistics bespeak the remarkable improvement in health conditions in New York City during the last half century. It is the more remarkable that the death rate should be one of the lowest of any city in the world when one considers that New York is the gateway through which the majority of immigrants enter this country, and that its millions of heterogeneous peoples from many countries have brought with them habits inferior to those of the native population and that they are living under such crowded conditions.

The Health Department of New York City can well be proud of the record. It has been invested with broad authority in all matters pertaining to health but its record amply convinces that this authority has not been abused.

There are one or two other factors in the production of this low death rate. During the last fifty years there has been tremendous improvement in the ability of physicians graduated from medical schools. The men now turned out are much better equipped to treat illness and have a deeper sense of their responsibility to the public as well as to their individual patients. They thereby have proved to be of very great assistance to the efforts of the Health Department. Then, too, during this same period, the amount of hospital facilities have increased enormously and the excellence of hospital treatment has tremendously improved. Hospitals have been a considerable factor in improved health conditions.

The public itself has also been helping themselves. People are becoming more interested and more intelligent in matters of health. Quacks do not flourish as they formerly did, and physicians themselves are compelled to render a high quality of service because their patients are too well informed to be satisfied with inferior treatment.

The major portion of credit, however, belongs to the Health Department, not only by what its staff actually does but by the dissemination of knowledge about disease, its prevention and treatment. Many physicians cherish antagonism against the Health Department, particularly when the department enters the field of treatment. They feel that bread is being taken out of their mouths. This recent extension of health department work has only been introduced to fill a gap; to furnish

treatment to those who could not or would not go to physicians because of the expense.

The health department desires only to meet this need by giving actual treatment only when necessary, first urging that the people go to their own physicians for such service. Those who criticize would do well to ask how often their patients consult them at the solicitation of the health department. They would be less inclined to find fault when by mistake the department has rendered free treatment where it was not deserved.

The achievements of the New York Health Department should be an inspiration to the whole country. If such results can be accomplished in such a crowded metropolis, what might be expected possible of achievement in smaller cities, towns and country districts?

LETTER TO THE EDITOR.

Editor of the RHODE ISLAND MEDICAL JOURNAL:

Permit me to offer a few suggestions in reference to your editorial "On Medical Expert Testimony," which appeared in your last issue of the JOURNAL. In the first place, I desire to express my entire agreement with you as to the evils attendant upon the practice of each party in an action at law selecting his own experts; but I also desire to state that "professional" experts appointed by the court would quite likely result in bringing such appointments under the influence of party politics, which, in my opinion, would have far more injurious effects than the present practice can be charged with.

The evils of expert testimony are rooted in (a) the hypothetical question, and (b) the ease with which medical practitioners are secured to testify on either side of a case. The hypothetical question is a comparatively modern development in the practice of law and its growth among other things is due to the readiness with which medical men are willing to express an opinion for or against any proposition, and also to the fact that to the lay mind all doctors are alike. The ordinary individual looks no further than the "Dr." or the "M.D." There are no degrees of ability and attainments to him and the lawyer takes advantage of this fact to cloud the issue. The lawyer has no use for the physician who insists upon investigat-

ing the facts for himself, wherever possible, and drawing his own conclusion from the facts as he finds them. If you will pardon the suggestion, but it seems to me that in your reference to psychiatrists you fall to the same error as the laymen. There is a large and increasing number of physicians of the school of psychiatry who refuse to testify on any matter which they cannot or are not permitted to investigate for themselves, and I venture to say that if there are psychiatrists who offer their services to the lawyer as experts and are willing to be "cabined, cribbed and confined" by the hypothetical question, such practitioners do not rank very high in this distinctly specialized branch of medicine.

Your suggestion that "physicians * * * have to take things as they find them," with respect to expert testimony, seems to me to be stating the proposition too broadly. Where the hypothetical question is involved physicians "take things" as the lawyers want to "find them." The medical expert would be in neither "a false" nor a "disagreeable position" if he insisted, wherever possible, on making investigations for himself and refusing to testify unless permitted to do that. Taking the results of the more or less partial investigations of others and giving an opinion thereon necessarily means a difference of opinion which gives full opportunity for partisanship. In one or two classes of cases, perhaps, this is inevitable and they are the very cases in which the hypothetical question gets in its most deadly work to the growing discredit of the medical profession.

A somewhat closer study of this question has led me to lean to the view that the profession, for its own sake, will either have to abolish the practice of giving expert testimony altogether or enter upon a propaganda of education with a view to the enlightenment of the laymen to the fact that doctors are very far from being equal in their attainments and ability and that prefixes and suffixes to names are of very little meaning, in the hope and expectation that perhaps a better and more reliable class of medical experts may be evolved who "shall be men who have the honor and good repute of their profession at heart" and "who are concerned solely with helping courts and juries to arrive at the truth" and not with helping lawyers to win cases, under the forms of law, irrespective of the real merits of the cases.

FREDERIC J. FARNELL, M.D.

MISCELLANEOUS

"OLD TIMES."

"Memory, no less than hope, owes its charm to the far away."

Mr. Editor:

The welcome given in your Lavender Corner to *Reminiscences of Rhode Island* encourages me to offer some recollections of a medical man in Ireland nearly fifty years ago. Entering by Cunard steamship the port of Queenstown, there comes remembrance of the breakfast at the hotel, wonderful mutton chops and fresh rolled, unsalted butter, product of the ever green tender sod of the well-named "Emerald Isle." Before reaching our destination, Rotunda Lying-In Hospital, Dublin, a short trip was taken through the country; Cork, then Blarney Castle, where, being lowered by ropes, the "stone" was duly kissed that we might subsequently have courage to meet the smooth native on more equal terms; on through Limerick to Muckross and the Lakes of Killarney; 'twas there on our way from the station, riding on a jaunting-car over the hills, we came to a cottage, the home of "Kate Kearney, who lives on the banks of Killarney," and here an invitation was accepted to partake of liquid refreshment, goats milk and "potheen," a potent liquid, distilled moonshine, a virgin product never stamped by legal minion, strongly impregnated, however, by the peaty twang, a taste or flavor due to the brew being prepared over a fire of the "auld sod." Then followed a steamboat sail down the beautiful lake among the islands, each with its fascinating legend, "The Devil's Punch-Bowl," "The O'Donoghue Stronghold," etc., etc. Finally returning to the station, we resumed our railroad journey to Dublin.

The Rotunda Lying-In Hospital, having a world-wide reputation, always had its limited accommodation for experience seekers well filled; among the number at that time was a medical practitioner from Brazil, one from Buenos Aires, another from India just finishing army service and brushing up midwifery to resume civil practice again, two from Glasgow, one from Edinburgh, two from London and a number from different sections of Ireland.

The morning after being settled in quarters and reporting for duty, I was requested to attend a call outside that required immediate attention; the pa-

tient, mother of several children, occupied the only bed in a home of two-rooms, a kitchen and bedroom. An environment of poverty and squalor but good nature prevailed with no complaint, the only nurse, a neighbor helping. When about to depart, the room was invaded by a group or procession, preceded by the proud father bearing a bottle and a glass, followed by the attendant neighbor carrying in her arms the baby, washed and covered, and others closing in brought up the rear, until the small room was well packed. Then, with a smile and a flourish, the doctor was invited to drink, but at that period, being a teetotaler, this was declined with thanks and never will be forgotten the look of dismay and astonishment that came over those faces and an old woman threw up her hands and exclaimed, "Oh, Doctor, dear, would you spoil the beauty of the babby!" Certainly not. Here was a situation to be met, a custom not lightly to be dealt with; ignorance on my part was not sufficient excuse; was my career as a successful obstetrician to be thus blighted in its early opening—my very first case in that old and honored institution—no! by no means, no! Pardon my seeming indifference, my thoughts were on directions for the well-being of the mother; we drink the health of the wonderful babby, she well may be the most beautiful in this whole block, health and long life to her and to her proud father and dear mother, the same to these kind friends and neighbors, and with the strong liquor burning my throat and nearly strangling, tears came to my eyes, due to the surprising strength of the unusual potation. However, the cause was attributed by an appreciative audience to deep sympathetic feeling for the occasion and the day was saved; the report came later to the hospital that "the doctor was all right." Kind friends, you may believe my lesson was well learned and so embarrassing an occasion did not again occur, for my conduct on subsequent and like ordeals might have challenged any who would dispute my claim to being "a beauty doctor."

G. EDWARD BUXTON.

HOSPITALS

RHODE ISLAND HOSPITAL.

The following promotions have been made in the Rhode Island Hospital:

Dr. Charles F. Gormly to Assistant Visiting Physician; Dr. Walter C. Gordon to Physician, O.P.D.; Dr. John J. Gilbert to Assistant Surgeon, Department of the Ear, Nose and Throat.

The following appointments have been made: Dr. George E. Teehan as Ophthalmological Externe, Dr. William A. Mahoney as Medical Externe, Dr. Parker Mills as Medical Externe, Dr. George W. Waterman as Medical Externe, Dr. Frank H. Ackrill as Dental Externe.

Dr. William H. Magill, a member of our staff, is recuperating after being operated upon at the Royal Victoria Hospital, Montreal, Que. His service has been taken over by Dr. I. H. Noyes, assisted by Dr. J. A. McCann.

The regular quarterly meeting of the Staff Association was held at the Hospital July 10 and the usual business was transacted.

Dr. Niles Westcott, 3rd Assistant Superintendent, is away on vacation and is taking a trip through New York State and Pennsylvania. Dr. Guy W. Wells finished a two-year internship here July 1st and is to take up work as resident physician at the Peter Bent Brigham Hospital on August 1st. Dr. Noble R. Chambers finished a two-year internship here July 1st and expects to take an eight months internship in Neurology at a Philadelphia Hospital.

Drs. Louis Garipey, Norman B. Muhme, Royal C. Hudson and Wilfred Pickles started internships here July 1st. Dr. Pickles was allowed one month's leave of absence, during which time Dr. Charles Inches has been substituting.

Drs. Carl J. Geiger, John Thomas Burns and John L. Sly, all former internes, have recently visited the Hospital.

NORMAN C. BAKER, M. D.,
2d Asst. Superintendent

CASE REPORT*

CASE OF P. R.

HISTORY: *O. P. D.* Admitted to Neurological Department May 21, 1921. Diagnosis—Compression Myelitis. May 25—Wassermann 4 plus with both antigens. May 21—X-ray of cervical spine.

"The examination of the cervical spine shows definite destruction of the bodies of the 4th and

Read before the Section on Medicine of the Rhode Island Medical Society, April 25, 1922, by Dr. Noble R. Chambers of the R. I. Hospital.

5th cervical vertebrae and of the intervertebral space. There is also some bony proliferation involving the bodies of the 4th, 5th and 6th vertebrae."

DIAGNOSIS: Deferred. Tuberculosis, new growth and injury should be considered. *House.* Admitted June 8, 1921. *Chief Complaint:* Weakness of hands and feet. *Family History:* Mother dead—"shock" at 55. Father died of pneumonia; 3 brothers and 2 sisters whereabouts unknown; two sisters died in infancy. No T. B., neoplasm, or mental trouble made out.

PAST HISTORY: Has no recollection of children's diseases. Primary lesion on lower lip 22 years ago, followed by secondary rach. Given small amount of antileptic treatment, apparently K. I. and mercury. Severe aching pains in bones, particularly legs, 15 years ago. Broke leg at that time. *Head.* No headaches, slight occasional dizziness lasting few minutes, last summer. Eyes, ears, nose, throat negative except throat sore at time of secondaries. *Card. resp.* No dyspnea or palpitation. No edema. *G. I.* Appetite good, no indigestion, bowels always much constipated. *G. U.* For past year 5-6 D, 3-4 N, with slight burning. Slight trouble in starting for past year.

HABITS: For past 25 years has indulged in sprees of alcoholism lasting 2-4 weeks at 8 or 9 months intervals. None in meantime. Of late has used considerable "Jakie." Coffee 3-4 cups a day. Tea infrequently. No drugs.

PRESENT ILLNESS: About 16 months ago noticed gradual onset of a sharp pain in back of neck, sometimes extending into shoulders. Worse at night, interfering with sleep, but during day would wear off. Six months ago noticed that right upper arm was weak, but he attributed this and the pain to the dampness of the basement in which he worked. About 5 weeks ago, however, right lower arm and hand became weak so that grip was lost—no loss of sensation noted. A week later the left arm and hand were similarly affected and legs became weak at about the same time—numbness of feet noted at onset but this has since passed off. For past two weeks, following a few days of marked polyuria, has had trouble in starting stream and for past 2-3 days has dribbled. Bowels more constipated than ever, but no incontinence.

PHYSICAL EXAMINATION: Patient is well developed and nourished adult of age lying quietly in bed not acutely ill apparently. *Eyes.* Left pupil

larger than right. *Chest.* Heart not enlarged to percussion, no murmurs, quality fair. Lungs negative. *Extremities.* Feet cold. Otherwise negative. Stiff fingers. *Reflexes.* All tendon reflexes hyperactive. Double ankle clonus. Abnormal plantar reflex but not distinctly Babinski; no Oppenheimer. Knee jerks particularly hyperactive. Sense or direction for touch normal. Disturbed tactile sensation everywhere but face. Says that sharp pointed instrument (pin) feels dull or light and not painful except when pressed fairly heavily.

X-RAY REPORTS: July 8, 1921. Cervical spine. The examination of the spine shows extensive destruction of the body of the first cervical vertebra and to a lesser extent the body of the fifth cervical vertebra with obliteration of the disc between these bones. There is marked kyphos in this region. This process might be due to specific disease. Tuberculosis should also be considered.

August 5, 1921. Cervical Spine. Examination of the cervical spine. The findings are much the same as previously noted. The process appears to be tuberculous.

Aug. 11, 1921. Examination of the upper cervical vertebrae. No abnormality seen. Sept. 28, 1921. Examination of the cervical spine. There is extensive destruction of the fourth and fifth cervical vertebrae and to a lesser extent the sixth cervical vertebra. There is some narrowing of the interspaces between the sixth and seventh vertebrae. There is a marked kyphos. The lesion appears to be somewhat more extensive than in the previous examination. It may be due to tuberculosis or specific disease, but we request views of some of the long bones including the tibiae.

March 23, 1922. Examination of the cervical spine. The appearance is much the same as in previous films. There is nearly complete destruction of the body of the fourth cervical, destruction of a large portion of the body of the fifth, and beginning process on the sixth cervical.

COURSE IN HOSPITAL: Patient still in bed with extension to head by chin strap. Strength of arms still much less than normal but much better as evidenced by grip.

COMPLICATIONS: Cystitis and bed sore. Now recovered from both.

LABORATORY AND TREATMENT REPORTS: Wassermann—July 13, 1921. Negative with acetone. Four plus with cholesterin. Sept. 8, 1921. Four plus with both antigens. Feb. 24, 1922. Four plus

with both antigens. Wassermann (spinal fluid)—June 13, 1921, negative except 4 plus with cholesterin—1 plus with acetone. Spinal Fluid. July 13, 1921. 108 cell count. Alb. trace. Spinal Fluid. Sept. 8, 1921. Negative except four plus with cholesterin—1 plus with acetone. Urine—Negative except at time of cystitis. Temp. and pulse normal except at time of cystitis.

TREATMENT: Patient has had Neosalvarsan and K. I. treatment. Extension applied to correct kyphos and massage.

CONCLUSIONS: 1. Wassermann positive. 2. X-ray shows destruction rather than proliferation, therefore favoring tuberculosis. 3. Patient has improved slightly.

Discussion by Dr. Harvey B. Sanborn.

SYNDROME OF MALIGNANT TUMORS OF THE NASOPHARYNX.

Gordon B. New, Rochester, Minn. (*Jour. A. M. A.*, July 1, 1922), is impressed with the facts that: (1) malignant tumors of the nasopharynx are much more common than has been believed; (2) the syndrome which they present is not generally known, which accounts for many patients being treated medically and surgically without the discovery of the tumor, and (3) there is a striking lack of nasal or nasopharyngeal symptoms in many of these cases. Seventy-nine cases demonstrate that many nasopharyngeal tumors are overlooked. This may be due to the fact that the patients consulted internists, neurologists, general surgeons or ophthalmologists, and an examination of the nose and throat was not made. In most cases, however, the tumor had been overlooked because a careful nasopharyngeal examination had not been made by the laryngologist. The syndrome presented by these tumors is quite typical, and the finding of a small nasopharyngeal tumor will usually clear up the diagnosis in cases in which it had been previously impossible to account for cer-

tain symptoms and findings associated with the head.

BOOK REVIEW

PRINCIPLES OF MEDICAL TREATMENT.

Fifth Revised Edition.

By George Cheever Shattuck, M.D., A.M.; Wm. Leonard, Inc., Boston.

"An attempt to offer clearly and concisely sound principles of treatment," this book summarizes in general, not in detail, methods which have been generally accepted and well tried out. The chapter on nephritis is perhaps the weakest in the book and will hardly satisfy the practitioner who is keeping abreast of modern work on this subject. The section on typhoid fever is particularly good and embodies the essentials of the treatment as carried out by that master of medicine, the author's father, Professor F. C. Shattuck. No reference is made to the use of foreign protein injections in early typhoid. The chapter by Dr. Place is an excellent summary, clear and concise. In dealing with the treatment of diphtheria, however, the discussion of the use of antitoxin seems inadequate. It is dealt within but a few sentences and the reader is referred to the back of the book, where the nature and use of serum antidiphthericum is described and one is surprised to note that no mention of intramuscular injections is made. In Dr. Blake's contribution, the student of clinical influenza will be inclined to criticize the suggestion that acetyl salicylic acid is used freely. Dr. Hawe's chapter on pulmonary tuberculosis is very good but the discussion of etiology and diagnosis is quite out of place. The contribution by Dr. Ragle on diabetes is quite the most satisfactory chapter in the book, being clear, definite and covering in a very few pages most of the important aspects of the subject. The book can be especially recommended to medical students and should be useful as a hand book to the general practitioner.

A. M. B.

ABSTRACTS

BASAL METABOLISM AND IDEAL WEIGHT
AND PULSE RATIOS.

More than twenty-five hundred observations on about twelve hundred subjects were made by Anne Peterson and Will Walter, Chicago. Contrary to the usual belief, there is no cause and effect relation between weight and thyroid activity as evidenced by the basal metabolism tests. Weight changes apparently are determined by other endocrines—possibly the anabolic types—rather than by the catabolic group to which the thyroid belongs. The conclusions should serve as a warning against the promiscuous administration of thyroid extracts in subjects who are overweight. Association was noted of low pulse definitely with low metabolism with gradual ascent of curve of rising metabolism with increase in pulse rate, until at 0 of metabolism an average pulse rate of 85 is recorded. After that point is reached, the metabolism shoots up with the increasing rapidity over the pulse rate until runaway pulse is reached, after which it does not change much. A pulse over 82 in men or 90 or over in women in a resting state is cause for suspicion of hyperthyroidism, and a basal metabolism test is indicated for final judgment and is likely to show plus. Several observations have shown that when the pulse rate drops from a high normal in action to a normal or low "basal" rate, the basal metabolism is most likely to show normal or low. The basal metabolism test is necessary for diagnosis and for therapeutic regulation. Its determination by tried out portable apparatus is reliable. The test is best made at the bedside of the subject, and the portable apparatus makes feasible its use in the home when proper technic is employed.—*Jour. A. M. A.*, February 4, 1922.

The following are abstracts of articles in the issue of *The Journal*, May 20, 1922:

TREND OF PRACTICE OF MODERN
MEDICINE.

Modern clinical medicine, says Frank Billings, Chicago (*Journal A. M. A.*, May 20, 1922), embraces such a vast field of knowledge that it is beyond the power of any individual to acquire the necessary whole field of medicine. A recognition

of this has led to the necessary specialization in medicine, with the evolution of the internist and of other specialists in the narrower fields of medicine and surgery. The wonderfully beneficial results of the application of asepsis have made the modern general surgeon a specialist. The evolution of medicine and the promotion of specialism have resulted in the invention of instruments of precision and the elaboration of laboratory methods of physical and functional diagnosis which require special technical skill and experience in their application. In consequence, diagnosis, both physical and functional, has become more precise and at the same time complex. Specialization in medicine developed rapidly before the war, and it may be said that the result was generally beneficial to clinical medicine and surgery, and to the public; but an early tendency to overspecialization became evident. In recent years, overspecialization in medicine has led to the organization of private practitioners into groups, with representatives in the membership of general or internal medicine and surgery and of most or all of the specialists of medicine and surgery, including laboratory specialists, for the purpose of affording greater efficiency in practice. Since the end of the war, the movement toward group practice has expanded rapidly. The organization of diagnostic and treatment pay group clinics is a more recent development. The suggested advantages of group practice include more efficient diagnostic and therapeutic service; financial economy to the patient, because the one fee charged for the total service rendered is adjusted to meet, without embarrassment, the financial resources of the patient; and professional co-operation in substitution of the prevailing individualism in medical practice. The value of the application of group practice is limited. Based on long experience in consultation and in general hospital and private practice, it is the author's opinion that a correct anatomic and functional diagnosis can be made in from 80 to 85 per cent. of all the patients of an average community by a qualified, industrious, painstaking general practitioner by the sole application of the trained mind, the special senses, the hand and an always available simple laboratory equipment. Likewise, approximately 80 per cent. of the patients will receive efficient management and treatment as ambulatory or house patients. The truth

is, the splendid knowledge which modern medicine has made available in the diagnosis and treatment of disease is misapplied frequently, with unfortunate derogatory effect on the public and the tendency to demoralize some members of the medical profession. Over and over again, an erroneous diagnosis is made on the basis of the laboratory findings, which would have been avoided and the correct diagnosis established by available simple methods of examination. This method of practice, and the false impression gained by the public through private and public group medical and surgical service with the usually attendant high cost, are tantamount to commercialism. It is recognized that the general practitioner, both in the city and in the country, lacks sufficient hospital facilities in the care of his patients. This lack is evident in some of the rural districts of practically all the States of the Union. Some feasible constructive program should be adopted which will afford justice to the taxpayers and to the members of the medical profession, and which will provide better hospital and diagnostic facilities where they are needed. We must, however, keep in mind the fact that a majority of patients do not require the application of unusual and refined methods of diagnosis, and also that a majority do not require hospital care. The pretentious program of some members of the medical profession and of uninformed members of the public for the irrational amplification of hospital beds for the treatment of practically all the ill and injured, is unnecessary and uneconomical, and promotes the disorganization of society.

TODAY'S PROBLEM IN DIABETES IN LIGHT OF NINE HUNDRED AND THIRTY FATAL CASES.

Whereas the death rate from diabetes in the Massachusetts General Hospital for the ninety years prior to 1914 averaged 28 per cent., since that date it has fallen to 7 per cent. In order to determine whether such a marked change in duration was confined to hospital cases, a study has also been made by Elliott P. Joslin, Boston (*Journal A. M. A.*, May 20, 1922), of the fatal cases of diabetes occurring in the city of Boston. Between 1895 and 1913 the average duration of life in the fatal cases of diabetes amounted to 3.3 years; for

1915 it was 4.3 years, and for 1920 it was 5.3 years. This result is believed to be the effect of treatment by the undernutrition diet. In any consideration of treatment for diabetes, Joslin says one must not lose sight of the enormous number of patients with diabetes and the necessity of treatment by simple methods. The general practitioner must have simple measures at his disposal. The justification for the test and maintenance diet card that Joslin now uses is that in practice it has shown a number of general practitioners and some patients how to become sugar free without danger, and—what is less dangerous but more difficult—how to enlarge the diet without the patient instantly showing sugar again; and finally, that of 536 cases treated in hospitals, the total deaths in the hospitals have been 11. These diet tables are described in detail.

ANOTHER MARTYR TO THE STUDY OF TYPHUS—A. W. BACOT.

When *THE JOURNAL* pointed out in a recent issue¹⁰ that the study of typhus fever not only requires expert knowledge and investigative skill of a high order, but also calls for real heroism, it could not have anticipated that within a few days another name was to be added to the list of the martyrs whom it extolled. On April 12 occurred the death of Arthur William Bacot, F.E.S., entomologist to the Lister Institute of Preventive Medicine in London, a victim of typhus fever which he contracted while engaged in an investigation of the disease at Cairo, Egypt. For several years Bacot has been an outstanding figure in the study of the bionomics of insects and their rule in the transmission of disease. Since early in the World War he concentrated his energies upon the problems raised by the louse, into the life-history and habits of which species he entered with great skill and success. Plague and yellow fever each received Bacot's attention several years earlier; and in 1920 he joined the Typhus Research Commission of the League of Red Cross Societies to Poland in the labors recently reviewed in these columns.¹¹ In the course of this work he

¹⁰ Typhus Fever: A Study of Disease and Its Martyrs, editorial, *J. A. M. A.* 78:1054 (April 8) 1922.

¹¹ Consult Footnote 10. Wollbach, S. B. et al.: *The Etiology and Pathology of Typhus*, Harvard University Press, Cambridge, Mass., 1922.

contracted trench fever at Warsaw and has communicated an excellent, detailed account of that illness, furnishing one of the few reports of unusual disease described by a competent observer who was himself the victim. All who know him can bear personal witness to the fearlessness and skill with which Bacot undertook his experiments with dangerous insects during the dark days of the war at a time when the menace of these species was suspected; but our ignorance of the immediate agencies concerned in the spread of threatening diseases made all manipulation of experimental test materials extremely hazardous. Entomology, which had at one time afforded a delightful pastime to this English gentleman, later became a "ruling passion" with him. As an enthusiastic amateur he enriched science through conspicuous contributions; and as a professional entomologist applying his knowledge to the use of preventive medicine, Bacot became an almost indispensable worker in the protection of mankind. Accordingly, lest we forget, let us reiterate the names of those who, as a consequence of their researches, contracted typhus and died: Bacot, Conneff, Cornet, Jochmann, Luthje, von Prowazek, Ricketts, Schussler.¹²—*Jour. A. M. A.*, May 20, 1922.

FACTORS IN THE CAUSATION OF BOTULISM.

No one who has followed the recurring reports of botulism outbreaks in this country can have failed to notice that certain articles of food are implicated much more frequently than others. First come the foods preserved by heat. Since the air is expelled in the heating process and since the containers of these foods must be hermetically sealed, it is easy to see that the anaerobic conditions so produced provide particularly favorable opportunities for the growth of any *Bacillus botulinus* spores that have survived the heating process. As with other bacteria, so here, growth is hindered by a high concentration of sugar or brine or by a marked acid reaction. Botulism

from jam or candied fruits or from brine-pickled green olives is unknown; indeed, the disease has been very rarely attributed to the use of any sort of preserved fruit.

Since botulism from canned foods is always traceable to imperfect sterilization, to failure to destroy the spores of *B. botulinus*, it is not surprising that a relatively high proportion of botulism outbreaks should have been traced to foods canned in the household, where facilities for maintaining cooking temperatures considerably above the boiling point are not always readily available. Commercially canned foods, however, are by no means exempt, and several instances are now on record in which foods canned on a large scale by modern processes have given rise to cases of botulism. The Kendallville, Ind., outbreak, which is described in this issue, is an example of poisoning due to a commercial product.

While the reasons for the apparently greater liability of some foods to contain the botulinus toxin are quite obscure, and while the conditions under which botulinus toxin is produced are possibly connected with the composition of the foodstuff and still remain to be worked out, there are other instances in which a plausible explanation may be advanced. It is evident that relative ease of heat penetration must be an important factor in attempts at heat sterilization. Certain foods are much more easily dealt with in this respect than others. Heat penetration is hardly a factor in canning soups, for example. From this standpoint it is tempting to conclude that the recent outbreaks of botulism traced to eating canned spinach, such as the one at Kendallville, afford an illustration of the importance of securing adequate heat penetration. Spinach and some other foods are recognized as presenting special difficulty. There is no doubt that with such foods the size of the container and the amount of material in each can are important factors in the possible causation of botulism. It is reassuring to find that the interests concerned, including state and national health authorities, are alive to the difficulty of the situation, and that suitable standards for the size of the can and amount of material as well as for sterilizing temperatures are being strictly applied. —*Jour. A. M. A.*, July 1, 1922.

¹² Obituary notices of Bacot will be found in the *Lancet*, April 22, 1922, p. 817; *Brit. M. J.*, April 22, 1922, p. 662; *London Letter*, this issue, p. 1550.

RADIUM EMANATIONS IN EXOPHTHALMIC GOITER—BLOOD VESSELS OF ADENOMAS OF THYROID.

Radium emanations have been used by Wallace I. Terry, San Francisco (*Journal A. M. A.*, July 1, 1922), and his associates in thirty-three cases of exophthalmic goiter. Only patients suffering from an extreme degree of hyperthyroidism, due to hyperplasia of the thyroid—the true exophthalmic goiters, have been subjected to this form of treatment, and only with the idea of converting them into better risks for major surgical procedures. Final results have been obtained in sixteen of the thirty-three cases in which radium emanations were received. Fourteen patients had resections of the thyroid after intervals varying from 32 to 114 days after radium. One patient died two days after a bilateral resection from acute hyperthyroidism. Another patient died nine months after resection of both lobes from recurring hyperplasia of the thyroid (substernal) and marked hyperplasia of the thymus and a terminal pneumonia. A third patient died three months after radium, from cirrhosis of the liver. A fourth patient died fifteen days after bilateral resection of the thyroid, from acute yellow atrophy of the liver. Ten patients are definitely cured after resection. Of these, one had diabetes mellitus, which has apparently disappeared since resection. Another had profound toxemia with jaundice at the time of entrance. In two cases there has been an apparent cure by radium alone. The amount of emanation and the number of tubes Terry says should vary according to the size of the goiter and the intensity of the symptoms—from 4 to 10 millicuries, contained in from six to eight tubes. The emanations are of value in preparing bad risk cases of exophthalmic goiter for further surgical treatment. The emanations should not be used in adenomatous goiters.

CONGENITAL MALFORMATION OF THE HEART.

In the case cited by O. J. Raeder, Paris, France (*Journal A. M. A.*, July 1, 1922), the congenital malformation of the heart was associated with complete obliteration of the pulmonary artery. There was definite evidence of a probable fetal endocarditis (small nodules on the valve cusps of the tricuspid valve). This would seem to lend argument to the theory of fetal inflammation. However, the presence of anisopsia (the right eye was larger than the left) and the curious branching of the vessels of the aortic arch, Raeder says, point with a more reasoning finger to the embryogenic theory. The advanced age of the mother (40) is another factor in favor of the latter theory, since it is known from statistics that anomalies are more common in the offspring of primiparous women of an advanced childbearing age.

ETHER AND LAVENDER

If some men had the brains they think they have, it would be possible to cut their hair with a lawn-mower.

One of the questions asked of a contemporary by a humble patient who kept a boarding house for men, was, "Is piles ketchin?"

When attending a "Hooch" party and a man commences to butter his watermelon, it is time to go home.

The man who talks much, says little—when the tongue works, the brain loaf.

HEALTH HINT.

Never shake pepper in a baby's right eye.